

SEQUENCE LISTING

<110> Moon, Chulso
Mao, Li

<120> DAP-Kinase and HOXA9, Two Human Genes Associated with Genesis,
Progression, and Aggressiveness of Non-Small Cell Lung Cancer

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<140> 10/045,400

<141> 2001-11-29

<150> US 60/250,083

<151> 2000-11-29

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<170> PatentIn version 3.1

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Val Lys Asp Pro Lys Lys Arg Met Thr Ile Gln Asp Ser Leu Gln His
260 265 270

Pro Trp Ile Lys Pro Lys Asp Thr Gln Gln Ala Leu Ser Arg Lys Ala
 275 280 285

Ser Ala Val Asn Met Glu Lys Phe Lys Lys Phe Ala Ala Arg Lys Lys
 290 295 300

Trp Lys Gln Ser Val Arg Leu Ile Ser Leu Cys Gln Arg Leu Ser Arg
 305 310 315 320

Ser Phe Leu Ser Arg Ser Asn Met Ser Val Ala Arg Ser Asp Asp Thr
 325 330 335

Leu Asp Glu Glu Asp Ser Phe Val Met Lys Ala Ile Ile His Ala Ile
 340 345 350

Asn Asp Asp Asn Val Pro Gly Leu Gln His Leu Leu Gly Ser Leu Ser
 355 360 365

Asn Tyr Asp Val Asn Gln Pro Asn Lys His Gly Thr Pro Pro Leu Leu
 370 375 380

Ile Ala Ala Gly Cys Gly Asn Ile Gln Ile Leu Gln Leu Leu Ile Lys
 385 390 395 400

Arg Gly Ser Arg Ile Asp Val Gln Asp Lys Gly Gly Ser Asn Ala Val
 405 410 415

Tyr Trp Ala Ala Arg His Gly His Val Asp Thr Leu Lys Phe Leu Ser
 420 425 430

Glu Asn Lys Cys Pro Leu Asp Val Lys Asp Lys Ser Gly Glu Met Ala
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Leu His Val Ala Ala Arg Tyr Gly His Ala Asp Val Ala Gln Val Thr
 450 455 460

Cys Ala Ala Ser Ala Gln Ile Pro Ile Ser Arg Thr Lys Glu Glu Glu
 465 470 475 480

Thr Pro Leu His Cys Ala Ala Trp His Gly Tyr Tyr Ser Val Ala Lys
 485 490 495

Ala Leu Cys Glu Ala Gly Cys Asn Val Asn Ile Lys Asn Arg Glu Gly
500 505 510

Glu Thr Pro Leu Leu Thr Ala Ser Ala Arg Gly Tyr His Asp Ile Val
515 520 525

Glu Cys Leu Ala Glu His Gly Ala Asp Leu Asn Ala Cys Asp Lys Asp
530 535 540

Gly His Ile Ala Leu His Leu Ala Val Arg Arg Cys Gln Met Glu Val
545 550 555 560

Ile Lys Thr Leu Leu Ser Gln Gly Cys Phe Val Asp Tyr Gln Asp Arg
565 570 575

His Gly Asn Thr Pro Leu His Val Ala Cys Lys Asp Gly Asn Met Pro
580 585 590

Ile Val Val Ala Leu Cys Glu Ala Asn Cys Asn Leu Asp Ile Ser Asn
595 600 605

Lys Tyr Gly Arg Thr Pro Leu His Leu Ala Ala Asn Asn Gly Ile Leu
610 615 620

Asp Val Val Arg Tyr Leu Cys Leu Met Gly Ala Ser Val Glu Ala Leu
625 630 635 640

Thr Thr Asp Gly Lys Thr Ala Glu Asp Leu Ala Arg Ser Glu Gln His
645 650 655

Glu His Val Ala Gly Leu Leu Ala Arg Leu Arg Lys Asp Thr His Arg
660 665 670

Gly Leu Phe Ile Gln Gln Leu Arg Pro Thr Gln Asn Leu Gln Pro Arg
675 680 685

Ile Lys Leu Lys Leu Phe Gly His Ser Gly Ser Gly Lys Thr Thr Leu
690 695 700

Val Glu Ser Leu Lys Cys Gly Leu Leu Arg Ser Phe Phe Arg Arg Arg
705 710 715 720

Arg Pro Arg Leu Ser Ser Thr Asn Ser Ser Arg Phe Pro Pro Ser Pro

725	730	735
Leu Ala Ser Lys Pro Thr Val Ser Val Ser Ile Asn Asn Leu Tyr Pro		
740	745	750
Gly Cys Glu Asn Val Ser Val Arg Ser Arg Ser Met Met Phe Glu Pro		
755	760	765
Gly Leu Thr Lys Gly Met Leu Glu Val Phe Val Ala Pro Thr His His		
770	775	780
Pro His Cys Ser Ala Asp Asp Gln Ser Thr Lys Ala Ile Asp Ile Gln		
785	790	795
Asn Ala Tyr Leu Asn Gly Val Gly Asp Phe Ser Val Trp Glu Phe Ser		
805	810	815
Gly Asn Pro Val Tyr Phe Cys Cys Tyr Asp Tyr Phe Ala Ala Asn Asp		
820	825	830
Pro Thr Ser Ile His Val Val Val Phe Ser Leu Glu Glu Pro Tyr Glu		
835	840	845
Ile Gln Leu Asn Pro Val Ile Phe Trp Leu Ser Phe Leu Lys Ser Leu		
850	855	860
Val Pro Val Glu Glu Pro Ile Ala Phe Gly Gly Lys Leu Lys Asn Pro		
865	870	875
Leu Gln Val Val Leu Val Ala Thr His Ala Asp Ile Met Asn Val Pro		
885	890	895
Arg Pro Ala Gly Gly Glu Phe Gly Tyr Asp Lys Asp Thr Ser Leu Leu		
900	905	910
Lys Glu Ile Arg Asn Arg Phe Gly Asn Asp Leu His Ile Ser Asn Lys		
915	920	925
Leu Phe Val Leu Asp Ala Gly Ala Ser Gly Ser Lys Asp Met Lys Val		
930	935	940
Leu Arg Asn His Leu Gln Glu Ile Arg Ser Gln Ile Val Ser Val Cys		
945	950	955
		960

Pro Pro Met Thr His Leu Cys Glu Lys Ile Ile Ser Thr Leu Pro Ser
 965 970 975

Trp Arg Lys Leu Asn Gly Pro Asn Gln Leu Met Ser Leu Gln Gln Phe
 980 985 990

Val Tyr Asp Val Gln Asp Gln Leu Asn Pro Leu Ala Ser Glu Glu Asp
 995 1000 1005

Leu Arg Arg Ile Ala Gln Gln Leu His Ser Thr Gly Glu Ile Asn
 1010 1015 1020

Ile Met Gln Ser Glu Thr Val Gln Asp Val Leu Leu Leu Asp Pro
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Arg Trp Leu Cys Thr Asn Val Leu Gly Lys Leu Leu Ser Val Glu
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Thr Pro Arg Ala Leu His His Tyr Arg Gly Arg Tyr Thr Val Glu
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Asp Ile Gln Arg Leu Val Pro Asp Ser Asp Val Glu Glu Leu Leu
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Gln Ile Leu Asp Ala Met Asp Ile Cys Ala Arg Asp Leu Ser Ser
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Gly Thr Met Val Asp Val Pro Ala Leu Ile Lys Thr Asp Asn Leu
 1100 1105 1110

His Arg Ser Trp Ala Asp Glu Glu Asp Glu Val Met Val Tyr Gly
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Gly Val Arg Ile Val Pro Val Glu His Leu Thr Pro Phe Pro Cys
 1130 1135 1140

Gly Ile Phe His Lys Val Gln Val Asn Leu Cys Arg Trp Ile His
 1145 1150 1155

Gln Gln Ser Thr Glu Gly Asp Ala Asp Ile Arg Leu Trp Val Asn
 1160 1165 1170

Gly Cys Lys Leu Ala Asn Arg Gly Ala Glu Leu Leu Val Leu Leu
 1175 1180 1185

Val Asn His Gly Gln Gly Ile Glu Val Gln Val Arg Gly Leu Glu
 1190 1195 1200

Thr Glu Lys Ile Lys Cys Cys Leu Leu Leu Asp Ser Val Cys Ser
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Thr Ile Glu Asn Val Met Ala Thr Thr Leu Pro Gly Leu Leu Thr
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Val Lys His Tyr Leu Ser Pro Gln Gln Leu Arg Glu His His Glu
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Pro Val Met Ile Tyr Gln Pro Arg Asp Phe Phe Arg Ala Gln Thr
 1250 1255 1260

Leu Lys Glu Thr Ser Leu Thr Asn Thr Met Gly Gly Tyr Lys Glu
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Ser Phe Ser Ser Ile Met Cys Phe Gly Cys His Asp Val Tyr Ser
 1280 1285 1290

Gln Ala Ser Leu Gly Met Asp Ile His Ala Ser Asp Leu Asn Leu
 1295 1300 1305

Leu Thr Arg Arg Lys Leu Ser Arg Leu Leu Asp Pro Pro Asp Pro
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Leu Gly Lys Asp Trp Cys Leu Leu Ala Met Asn Leu Gly Leu Pro
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Asp Leu Val Ala Lys Tyr Asn Thr Asn Asn Gly Ala Pro Lys Asp
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Phe Leu Pro Ser Pro Leu His Ala Leu Leu Arg Glu Trp Thr Thr
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Tyr Pro Glu Ser Thr Val Gly Thr Leu Met Ser Lys Leu Arg Glu
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Leu Gly Arg Arg Asp Ala Ala Asp Leu Leu Leu Lys Ala Ser Ser
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Val Phe Lys Ile Asn Leu Asp Gly Asn Gly Gln Glu Ala Tyr Ala
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 Arg Arg Arg Ala Arg His Ala Ser Arg Ala Ala Pro Glu Leu Val Gly
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 Asp Leu Gly Ser Phe Leu Leu Leu Gly Ser Thr Phe Leu Ser Thr Gly
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 Thr Thr Leu Pro Phe Ile Thr Ser Val Glu Ile Val Ser Arg Tyr Leu
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 Cys Ala Arg Gly Ser Gly Arg Ala Gly His His Gly Pro Gly Arg Ala
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 agg cct gcg gtg gca acc tcg gct ttc cct gct cag gag cct cgt gtc 288
 Arg Pro Ala Val Ala Thr Ser Ala Phe Pro Ala Gln Glu Pro Arg Val
 85 90 95
 ttt ctc cgc agc gct ttg cca gcc ggc cgg ctt tcc cct tcc acc aca 336
 Phe Leu Arg Ser Ala Leu Pro Ala Gly Arg Leu Ser Pro Ser Thr Thr
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 cac ctc cac ctg gtc aca gca gat aac cca gca gcc aac tgg ctt cat 384
 His Leu His Leu Val Thr Ala Asp Asn Pro Ala Ala Asn Trp Leu His

115	120	125	
gcg cgc tcc act cgg aaa aag	cgg tgc ccc tat aca aaa cac cag acc		432
Ala Arg Ser Thr Arg Lys Lys	Arg Cys Pro Tyr Thr Lys His Gln Thr		
130	135 140		
ctg gaa ctg gag aaa gag ttt	ctg ttc aac atg tac ctc acc agg gac		480
Leu Glu Leu Glu Lys Glu Phe	Leu Phe Asn Met Tyr Leu Thr Arg Asp		
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cgc agg tac gag gtg gct cga	ctg ctc aac ctc acc gag agg cag gtc		528
Arg Arg Tyr Glu Val Ala Arg	Leu Leu Asn Leu Thr Glu Arg Gln Val		
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aag atc tgg ttc cag aac cgc	agg atg aaa atg aag aaa atc aac aaa		576
Lys Ile Trp Phe Gln Asn Arg	Arg Met Lys Met Lys Lys Ile Asn Lys		
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Asp Leu Gly Ser Phe Leu Leu	Leu Gly Ser Thr Phe Leu Ser Thr Gly		
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Thr Thr Leu Pro Phe Ile Thr	Ser Val Glu Ile Val Ser Arg Tyr Leu		
	50 55 60		
Cys Ala Arg Gly Ser Gly Arg	Ala Gly His His Gly Pro Gly Arg Ala		
65	70 75 80		
Arg Pro Ala Val Ala Thr Ser	Ala Phe Pro Ala Gln Glu Pro Arg Val		
	85 90 95		
Phe Leu Arg Ser Ala Leu Pro	Ala Gly Arg Leu Ser Pro Ser Thr Thr		
	100 105 110		

His Leu His Leu Val Thr Ala Asp Asn Pro Ala Ala Asn Trp Leu His
 115 120 125

Ala Arg Ser Thr Arg Lys Lys Arg Cys Pro Tyr Thr Lys His Gln Thr
 130 135 140

Leu Glu Leu Glu Lys Glu Phe Leu Phe Asn Met Tyr Leu Thr Arg Asp
 145 150 155 160

Arg Arg Tyr Glu Val Ala Arg Leu Leu Asn Leu Thr Glu Arg Gln Val
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Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Met Lys Lys Ile Asn Lys
 180 185 190

Asp Arg Ala Lys Asp Glu
 195